

1. A copper alloy comprising:
2 30 to 50 weight percent nickel;
2 to 6 weight percent silica;
4 1 to 10 weight percent iron;
1 to 10 weight percent chromium;
6 1 to 10 weight percent of at least one element selected from the group consisting
of: Mo, W, Ti, Zr, Nb and V;
8 1 to 10 weight percent manganese;
1 to 3 weight percent yttrium and/or hafnium; and
10 a balance of copper.

2. A copper alloy comprising:
2 5 to 15 weight percent nickel;
2 to 6 weight percent silica;
4 1 to 10 weight percent iron;
1 to 10 weight percent chromium;
6 1 to 10 weight percent of at least one element selected from the group consisting
of: Mo, W, Ti, Zr, Nb and V;
8 1 to 10 weight percent manganese;
1 to 3 weight percent yttrium and/or hafnium; and
10 a balance of copper.

3. A copper alloy comprising:
2 2 to 5 weight percent nickel;
1 to 3 weight percent silica;
4 1 to 3 weight percent iron;
10 to 15 weight percent manganese; and
6 a balance of copper.

4. An aluminum silica alloy containing silicide and carbide formation
2 centers.

5. A metal system having at least two layers comprising a copper alloy as a
2 bond coat between a substrate having a predominance of aluminum and a nickel alloy.

6. A cast Al-Si alloy engine head having a valve seat constructed through the
2 deposition of the alloy of claim 1.

7. A cast Al-Si alloy engine head having a valve seat constructed through the
2 deposition of the alloy of claim 2.

8. A cast Al-Si alloy engine head having a valve seat constructed through the
2 deposition of the alloy of claim 3.

9. A cast Al-Si alloy engine head having a valve seat constructed through the
2 deposition of the alloy of claim 4.

10. A cast Al-Si alloy engine head having a valve seat constructed through the
2 deposition of the alloy of claim 5.